

- a. Draw the structure of water. Include the partial charges of each atom.
- b. Why is water considered to be a polar molecule?
- a. What enables neighboring water molecules to hydrogen-bond to one another?
- b. How many hydrogen bonds can each water molecule form?
- a. Explain the difference between adhesion and cohesion. Give an example of each.
- b. How do adhesion and cohesion explain capillary action?
4. What is surface tension? Give an example.
- a. What is specific heat? Why
- b. Explain why water has such a high specific heat.
- c. Explain why it is cooler by the lake (or any body of water) in the summer and warmer by the lake in the winter.

6. a. Explain why ice is less dense as a solid than as a liquid.
- b. Why is this property so important for the fish and other wildlife that live in the lakes and ponds of Indiana?
7. a. Why is water called the universal solvent? What does polarity have to do with this?
- b. How does water dissolve a substance like NaCl? Draw a picture illustrating this.
8. What do hydrophobic and hydrophilic mean?
9. a. Soap and detergents are surfactants. What is a surfactant?
- b. How do detergents clean the grease from your clothes?
10. List five special properties of water and give an example (other than ones from this worksheet) of each.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____